A System For Creating and Modifying Curves and Surfaces

ABSTRACT OF THE DISCLOSURE

A system that has a flexible tape input device with bend and twist sensors spaced along the tape and a curve generation system producing 5 a virtual B-spline tape curve using the bend and twist information. A shape of the tape can be physically constrained to assist a user in obtaining and holding a desired shape. A world position sensor senses the real world position and orientation for the tape in world space and the virtual curve is placed in a scene responsive to the position and orientation. The curve at a 10 desired location can be input into a virtual scene. The virtual curve can be used to create, control and edit 3D curves, surfaces and objects in real time. The tape can also act as a shape scanning device as well as a command input device.